

Preface

This volume contains the Proceedings of the international HPCN Europe 2001 event that was held in Amsterdam, The Netherlands, June 25 – 27, 2001. HPCN (High Performance Computing and Networking) Europe was organized for the first time in 1993 in Amsterdam as the result of several initiatives in Europe, the United States, and Japan. HPCN Europe events were then held in Munich (1994), Milan (1995), Brussels (1996), Vienna (1997), at Amsterdam RAI in 1998/9, and then at the University of Amsterdam, Watergraafsmeer, in 2000 and 2001.

HPCN 2001 is a conference and multi-workshop event. At the conference there will be 3 conference tracks presenting 56 selected papers in the following areas: Web/Grid Applications of HPCN, End User Applications of HPCN, Computational Science, Computer Science, as well as 2 poster sessions with 30 presentations.

Three renowned speakers will present the HPCN 2001 keynote lectures: Giovanni Aloisio (U. of Lecce, Italy), speaking on Grid applications in Earth Observing, Paul Messina (Caltech, California, USA), speaking on using terascale Grids in science, and Jose Moreira (IBM, New York, USA) on performance and prospects for Java.

Since research in HPCN is progressing rapidly, newly emerging domains of this field and their present and possible future applications are covered by five thematic workshops. Over 20 well-known experts from Europe and the United States participated in the organization of the workshops and have agreed to present invited lectures demonstrating the current trends in their fields of interest.

The workshop “Demonstrations of the Grid” featured a few significant speakers, and each presented a live demonstration of high-performance computing and networking, together with explanation. The associated workshop on “Scheduling Grid Resources” covered practical aspects of getting work done on these powerful resources. The workshop “Java in High Performance Computing” covered ways of using this developer-friendly language for high-performance computing. After the first full release of the human genome a few months before, the “Bioinformatics” workshop is especially apt, and we expect this segment of computing to take up more space in the next HPCN. The workshop on “Monte-Carlo Numerical Methods” was an informative exchange on developments in this burgeoning field.

The papers included in the Proceedings reflect the multidisciplinary character and broad spectrum of the field. We thank all contributors for their cooperation. Due to the high quality of almost 200 submitted contributions the selection of papers for oral and poster presentation was not simple. We are very grateful to the reviewers for their efforts in evaluating so many papers in a very short time.

The best conference papers will be published in a special issue of the journal, Future Generation Computer Systems.

The drawing up of an interesting program for the Conference would not be possible without invaluable suggestions and contributions of the members of the HPCN 2001 Program Committee. We highly appreciate the personal effort of the members of the local organizing committee and the conference secretariat. Special thanks to Berry van Halderen and Lodewijk Bos who prepared these proceedings. We would like to express our sincere thanks to Berry van Halderen for setting up the paper submission engine, and Anne Frenkel and Joost Bijlmer for creating the web pages.

The organizers acknowledge the help of the Dutch HPCN foundation, the Dutch Organization for Scientific Research, the University of Amsterdam, Hewlett-Packard Corporation, Cosinus Computing bv, and the council of the city of Amsterdam for supporting the event. Finally we thank all the attendees and contributors to the conference who made this conference and multi-workshop a high quality event!

May 2001

Bob Hertzberger
Alfons Hoekstra
Roy Williams

Organization

Event Chairman:

L.O. Hertzberger, University of Amsterdam, The Netherlands

Scientific Organization:

Roy Williams, California Institute of Technology, U.S.A.

Conference Chair

Alfons Hoekstra, University of Amsterdam, The Netherlands

Conference Co-chair

Program Committee

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Vladimir Getov (University of Westminster, London, U.K.)

Luc Giraud (CERFACS, France)

Gregor von Laszewski (Argonne National Laboratory, France)

Ralph Gruber (Polytechnic Federal School of Lausanne, Switzerland)

Tony Hey (University of Southampton, U.K.)

Ladislav Hluchy (Institute of Informatics, Slovak Academy of Sciences, SK)

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Jean Louis Pazat (IRISA, France)
Jose Moreira (IBM T. J. Watson Research Center, U.S.A.)
Peter Kacsuk (KFKI-MSZKI Research Institute, Hungary)
Heather Liddell (Queen Mary, University of London, U.K.)
Bob Madahar (BAE SYSTEMS Advanced Technology Centres, U.K.)
Tomas Margalef (Universitat Autònoma de Barcelona, Spain)
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Dirk Roose (K.U.Leuven, Belgium)
Guiseppe Serazzi (Politecnico di Milano, Italy)
Sia Zadeh (Sun Microsystems, U.S.A.)
Peter Sloot (University of Amsterdam, The Netherlands)
C.J.Kenneth Tan (The Queen's University of Belfast, U.K.)
David Taniar (Monash University, Australia)
Vladimir Getov (University of Westminster, London, U.K.)
Henk van der Vorst (Universiteit Utrecht, The Netherlands)
Roy Williams (California Institute of Technology, U.S.A.)

Referees

Hamideh Afsarmanesh	Miroslav Dobrucky
Dick van Albada	Jack Dongarra
Giovanni Aloisio	Iain Duff
Shaun Arnold	Uwe Fladrich
Adam Belloum	Anne Frenkel
Ammar Benabdelkader	Cesar Garita
Alexander Bogdanov	Alfred Geiger
Holger Brunst	Wolfgang Gentzsch
Marian Bubak	Vladimir Getov
Massimo Cafaro	Nguyen T. Giang
Luis Camarinha-Matos	Luc Giraud
Denis Caromel	Ralph Gruber
Bastien Chopard	Phil Hatcher
Paolo Cremonesi	Tony Hey
Marco Danelutto	Ladislav Hluchy
Vincenzo De Florio	Alfons Hoekstra
Vijay Dialani	Fabrice Huet

Marty Humphrey
 Astalos Jan
 Peter Kacsuk
 Ersin Kaletas
 C.J. Kenneth Tan
 Gregor von Laszewski
 Heather Liddell
 Bob Madahar
 Danelutto Marco
 Tomas Margalef
 Jose Moreira
 Lorenzo Muttoni
 Jarek Nabrzyski
 Wolfgang Nagel
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 Jean Louis Pazat
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 Jeff Reeve
 Alexander Reinefeld

Dirk Roose
 Florian Schintke
 Claudia Schmidt
 Stephan Seidl
 Miquel Angel Senar
 Guiseppe Serazzi
 Jens Simon
 Peter Sloot
 Geoffrey Stoker
 David Taniar
 George K. Thiruvathukal
 Anne Trefethen
 Julien Vayssiere
 Tran D. Viet
 Dialani Vijay
 Henk van der Vorst
 Roy Williams
 Manuela Winkler
 Sia Zadeh
 Nemeth Zsolt

Workshop Chairs:

Demonstrations of the GRID

Peter Kacsuk; Roy Williams

Java in High Performance Computing

Vladimir Getov; George K. Thiruvathukal

Monte Carlo Numerical Methods

C.J. Kenneth Tan; Vassil Alexandrov

Scheduling GRID Resources

Marian Bubak

BioInformatics

Harmen Bussenaker

Local Organization:

Lodewijk Bos, MC-Consultancy

Rutger Hamelynck and Marinella Vermaas, Conference Office, University
of Amsterdam

Anne Frenkel, Berry van Halderen, Joost Bijlmer, Jacqueline van der
Velde, University of Amsterdam

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